

What is claimed is:

1. A molding die comprising:

(a) a pair of molding die members for forming a molding cavity that molds molded products; and

(b) a holding member for holding therein the molding die members slidably,

wherein a pressure-transfer medium supplied to a clearance between the molding die members and the holding member makes the molding die members to be slid and held in the holding member while the molding die members and the holding member are on the non-contact state.

2. The molding die of claim 1, wherein the clearance between the molding die members and the holding member is within a range of 0.1 - 100 μm .

3. The molding die of claim 1, wherein the pressure-transfer medium is gas or liquid.

4. The molding die of claim 1, wherein the molding die member has a supply port for the pressure-transfer medium that supplies pressure-transfer media to the clearance between the molding die members and the holding member.

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5. The molding die of claim 1, wherein the holding member has a supply port for the pressure-transfer medium that supplies pressure-transfer media to the clearance between the molding die members and the holding member.

6. The molding die of claim 1, further comprising a plurality of supply ports for pressure-transfer medium which supply pressure-transfer media to the clearance between the molding die members and the holding member.

7. The molding die of claim 6, wherein the plurality of supply ports for pressure-transfer medium are arranged in an axial direction of the molding die, and further are arranged in a plane perpendicular to the axial direction.

8. The molding die of claim 1, further comprising:

a supply port for the pressure-transfer medium that supplies pressure-transfer media to the clearance between the molding die members and the holding member;

a supply path for the pressure-transfer medium connected to the supply port for the pressure-transfer medium; and

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a fixed throttle provided on the supply path for the pressure-transfer medium for regulating a flow of the pressure-transfer medium, where T represents a glass transition point of a material for the molding die.

9. The molding die of claim 1, further comprising a supply port for the pressure-transfer medium that supplies pressure-transfer media to the clearance between the molding die members and the holding member,

wherein a circumference of the supply port for the pressure-transfer medium is recessed.

10. The molding die of claim 1, further comprising:

a supply port for the pressure-transfer medium that supplies pressure-transfer media to the clearance between the molding die members and the holding member;

a supply path for the pressure-transfer medium connected to the supply port for the pressure-transfer medium; and

an automatic adjusting throttle provided on the supply path for the pressure-transfer medium.

11. The molding die of claim 1, wherein the molding die member or the holding member has a porous member through

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which the pressure-transfer medium is supplied to the clearance.

12. The molding die of claim 1, wherein the molding die member or the holding member is made of ceramic material.

13. The molding die of claim 1, wherein the molded products are optical elements.

14. A molding apparatus comprising:

(a) a molding die comprising

(1) a pair of molding die members which form a molding cavity for molding molded products, and

(2) a holding member that holds therein the molding die member slidably; and

(b) a pressure-transfer medium supplying means for supplying the pressure-transfer medium to a clearance between the molding die member and the holding member, wherein the pressure-transfer medium supplied to the clearance makes the molding die members to be slid and held in the holding member while the molding die members and the holding member are on the non-contact state.

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15. The molding apparatus of claim 14, wherein the clearance between the molding die members and the holding member is within a range of 0.1 - 100 μm .

16. The molding apparatus of claim 14, wherein the pressure-transfer medium is gas or liquid.

17. The molding apparatus of claim 14, wherein the pressure-transfer medium is supplied to the clearance under a pressure of 200 kPa - 2000 kPa.

18. The molding apparatus of claim 14, wherein the pressure-transfer medium is supplied to the clearance at temperature of 100 - 1000°C.

19. The molding apparatus of claim 14, wherein the pressure-transfer medium is supplied to the clearance at temperature of $(T - 200^\circ\text{C})$ to $(T + 200^\circ\text{C})$, where T represents a glass transition point of a material for the molded products.

20. The molding apparatus of claim 14, further comprising a plurality of supply ports for pressure-transfer

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medium which supply pressure-transfer media to the clearance between the molding die members and the holding member.

21. The molding apparatus of claim 14, wherein the plurality of supply ports for pressure-transfer medium are arranged in an axial direction of the molding die, and further are arranged in a plane perpendicular to the axial direction.

22. The molding apparatus of claim 20, wherein a distance of the clearance between the molding die members and the holding member is controlled by regulating pressure of the pressure-transfer medium supplied from the plural pressure-transfer medium supply ports.

23. The molding apparatus of claim 22, wherein a shifted eccentricity of the molding die members is controlled by regulating pressure of the pressure-transfer medium supplied from the plural pressure-transfer medium supply ports.

24. The molding apparatus of claim 22, wherein a tilted eccentricity of the molding die members is controlled by

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regulating pressure of the pressure-transfer medium supplied from the plural pressure-transfer medium supply ports.

25. The molding apparatus of claim 14, wherein the molded products are optical elements.

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